

REMARKS

In response to the Office Action dated May 10, 2002, Applicants request reconsideration. No claims are added or cancelled so that claims 1-12, 14-20, and 26 remain pending.

Claim 26 is amended to correct an obvious typographical error.

Much of the Official Action is directed to the claim limitation referring to a "shrink-fit". Attempting to understand the Official Action has been made somewhat difficult by numerous typographical errors. It is presumed that the sixth sentence of the Official Action intended to state "Applicants contend that shrink-fit connotes structure." Applicants maintain that position for the reasons presented in the previous response. However, that contention is not the sole basis for distinguishing the invention from the prior art.

All claims are rejected as obvious over Tanigushi et al. (U.S. Patent 5,568,448, hereinafter Tanigushi) considered by itself. It is understood that Taniguchi (U.S. Patent 6,272,916) is no longer relied upon for any rejection. The rejection is again respectfully traversed.

The first two sentences of the second paragraph of the Official Action at page 2 are understood to state the following:

"Applicants contend that the omission of an element (pre-load spacers) in Tanigushi with the consequent loss of function would not have been obvious to one of ordinary skill in the art. First, there need not be an explicit teaching in Tanigushi since the basic premise is settled in case law."

Assuming the foregoing sentences state what the Examiner intended to state, the Examiner has mischaracterized what is claimed and therefore applied an incorrect legal standard in rejecting the claims. In the invention as defined by the pending claims, for example, claim 1, a first support surface of an oscillator support that is shrink-fit to a magnetostriction oscillator, directly abuts a first end surface of the magnetostriction oscillator. In addition, a second support surface of the oscillator support that is part of the shrink-fit directly abuts a second end surface of the magnetostriction oscillator. These two end surfaces of the magnetostriction oscillator are the sources of propagation of the acoustic waves generated by the oscillator. The quality of the acoustic waves propagated depends upon how well these end surfaces of the oscillator are coupled to the support in which the waves travel. In Tanigushi, the end surfaces are tightly coupled to the support surfaces with

pre-loading mechanisms. In the claimed invention, the direct and stressed contact between the support and oscillator characterizes the shrink-fit.

As pointed out in the previous response, there is a fundamental difference between the invention and what is disclosed in Tanigushi. While Tanigushi certainly describes a magnetostriction oscillator held within an oscillator support, there is no direct contact between the oscillator and the supporting surfaces of the support. Instead, Tanigushi includes pre-load mechanisms 25, relatively complex mechanical devices, interposed between the ends of the oscillator and the support surfaces. These mechanisms apply a static mechanical load, i.e., the pre-load, to the oscillator to ensure good coupling to the support of the acoustic wave generated by the oscillator. There can be no pre-load mechanisms or equivalent element in the claimed invention because of the express language of the claims requiring direct contact between the support and oscillating or only the intervention of a passive spacer. Thus, in the invention, an element in the prior art, not pre-load spacers but pre-load mechanisms, is eliminated.

The Examiner erroneously characterized the elimination of the pre-load mechanisms as the omission of a prior art element "with the consequent loss of function". It is on this point that the Official Action goes wrong. The function of the pre-load mechanisms of Tanigushi is not lost in the invention. Their function, i.e., the pre-load stress essential to proper operation of the oscillator, is provided in the invention through the shrink-fitting, i.e., the direct contact under compression, between the support surfaces of the oscillator support and the oscillator. Thus, in the present situation there is an omission of one or more prior art elements, yet retention of the function of those elements by the shrink-fitting of the oscillator to the support. This factual situation is similar to the facts in In re Edge, 149 USPQ 1559 (CCPA 1966, Rich, J.) in which the elimination of an element of a prior art structure with retention of its function was, in fact, the basis of patentability. When the rule of Edge is applied, as is appropriate here, rather than the rule cited by the Examiner, which is applicable in some circumstances but not here, then it is apparent that the claims are clearly patentable over Tanigushi.

This conclusion that the claims are patentable over Tanigushi follows, even if the term "shrink-fit" is ignored. There is no direct contact between the ends of the oscillator and the support surfaces in Tanigushi. There is no teaching in Tanigushi that there should be direct contact between the oscillator and end surfaces. If there were such a teaching, then the Examiner's position might be sustainable, even in the absence of pre-loading. However, no reasoning has been presented as to how Tanigushi would suggest achieving such direct contact or how, if Taniguchi were modified to include direct contact, such a structure could reasonably function to achieve its purpose, i.e., provide good acoustic wave coupling and

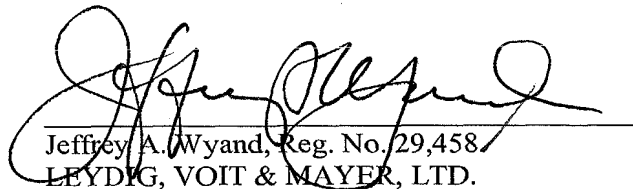
In re Appln. of Taniguchi et al.
Application No. 09/697,678

wave propagation in the support without pre-loading. On this ground alone, *prima facie* obviousness has not been established.

The third point made by the Examiner is irrelevant to the patentability of the invention. The Examiner acknowledged that the pre-loading of the magnetostrictive oscillator is known in the prior art and is expected to be beneficial. This generalized statement does not supply any means of achieving that pre-loading, such as shrink-fitting. The only basis for applying such a pre-load of record in the patent application is the use of the pre-loading mechanisms in Tanigushi which do not suggest and, in fact, counsel against direct contact between the ends of the oscillator and the support surfaces of the oscillator support. The Examiner's reliance upon other means of establishing such a pre-load, such as a "force fit", are based solely on knowledge of the invention and they are not derived in any way from Tanigushi, the only reference now applied in rejecting the claims. Such hindsight reasoning is never a proper basis for rejection. Therefore, for this reason the rejection should be withdrawn

Reconsideration of the rejection in view of the application of an inapposite rule of law, the factual lack of basis for modifying Tanigushi, and the hindsight analysis of the invention, is earnestly solicited, along with allowance of all of the claims now pending.

Respectfully submitted,



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